

## **Mastering accountability– Integrating tools and social processes in cross-border knowledge production in the PERSONA project**

**Anne Granstrøm Ekeland, J. Artur Serrano, Frank Larsen**  
NST - Norwegian Centre for Integrated Care and Telemedicine  
University Hospital of North Norway  
Email: user.needs.and.requirements@gmail.com

### **Abstract**

The paper explores, from a sociological perspective, collaboration across disciplinary boundaries and between different pulling forces within the European Ambient Assisted Living (AAL) project PERSONA [PERSONA 2008].

The PERSONA project embraces technological challenges in the context of Ambient Intelligence to face the problem of an aging population in Europe. AAL aims at developing technological services and contexts, where elderly people can increase their independency. The project believes that the application of new technologies can improve the quality of life of senior citizens.

The main topic of this paper is the translation of user needs into user requirements, in a multidisciplinary context, for the production of technological home-based services, intending to support independent living of senior citizens. For this purpose an online tool for the Volere method [Volere 2008] was deployed. This online collaborative tool extends the contents and the form of the original Volere template. The Volere method assumes no previous knowledge and a minimal training is required for its use. The methodology in the project, in this context defined as “a collection of methods and tools (...) used for the development of an iteratively refined specification of user requirements” [Serrano et al 2008], stems from the Volere method given in the reference book “Mastering the Requirements Process” [Robertson 2006]. This process was accomplished within a user requirements task, by a team of technologists and sociologists as described next.

The process started with the presentation of mock-ups, that is, videotaped, photographed or computer generated scenarios of relevant services, to be presented to the PERSONA potential users, intending to assess reactions and define user needs. Social scientists, that is, sociologists, were assigned to the process for the purpose of bringing qualitative expertise to the process of assessing, analysing and conveying user needs into the user requirements identification.

As discussed in [Serrano et al 2008], the intrinsic complexity of projects in the AAL area, which derives from the presence of three, at times conflicting, pulling forces: business, technology and user needs - demands a concerted approach to the specification of user requirements. In practice, the presence of these three forces, could lead to three different and maybe incompatible lists of requirements. Working teams within PERSONA were divided into three activity lines: Technology, Users and Business, each comprising one of these three forces. The challenge of synergically combining these three forces was addressed by providing the mock-ups evaluation results to three teams, one from each of the activity lines. Through the use of the PERSONA collaborative tool, the Volere method for identification of user requirements was used in a collaborative environment and a set of requirements was obtained and after prioritized. The user requirements list was later to be presented to and discussed with the Technology activity line (and the Business activity line, which is not

focused in this paper) in consortium meetings, where services to be developed should be prioritised through discussions on the identified user requirements.

In this project, at the subsequent consortium meeting, we experienced that the carefully prioritized services by means of the Volere based tools and collaboration across disciplinary boundaries within the user requirements process, were altered. After the presentation and following interaction and discussion with the technology developers, the ranked order of priorities were altered, resulting from the claim from developers that the users (and subsequently the social scientists in the user requirements task) had not fully understood the qualities of their first priority.

Based upon the experiences from this translation process from user needs to user requirements and subsequent prioritization of services, we argue that the deployment of tools and technologies, must be combined with awareness of social processes, for instance the relative power relations between the different knowledge traditions in “technology” and social science, and the different pulling political forces present in PERSONA. This is a prerequisite for mastering the process of knowledge production for the purpose of arriving at accountable knowledge for development of sustainable services.

This topic partakes in a current debate in STS (Science and Technology Studies), including the perception that politics, democracy, and participation in scientific and technological knowledge production are pervasive. Politics might take the form of a general concern about *which* institutions, and understandings; *which* participants with *what* qualifications, roles, and responsibilities; would be most democratic and serve users, while preserving the benefits of scientific and technical expertise. And these are posed as problems of concrete technologies, practices, and institutions in specific places and circumstances with particular challenges and limitations [Hackett et al 2007].

The user requirements identification task carried out in PERSONA project clearly shows the potential conflicts between technology and user’s perspectives as a result of their different needs, expectations and priorities. The multidisciplinary approach supported by a collaborative on-line tool, in a process where the sociologists intervened from the start, allowed for a stronger influence of the “users’ voice” and a harmonization of the different pulling forces before mentioned. Future evaluation of the services to be deployed will help to expose the extent of the benefits from this work.

## References

- [Hackett et al 2007] Hackett, Edward J., Amsterdamska, Olga, Lynch, Michael and Wajcman, Judy (Eds.): *The Handbook of Science and Technology Studies*, MIT Press, 2007.
- [PERSONA 2008] “PERSONA Project Portal”, “<http://www.aal-persona.org>. (Last accessed 17 Nov 2008).
- [Robertson 2006] Robertson S. and J. Robertson: *Mastering the Requirements Process*. Addison Wesley Professional, Upper Saddle River, N.J., USA 2006.
- [Serrano et al 2008] J. Artur Serrano, Katrin Müller, Anne G. Ekeland, Frank Larsen: *Collaborative User Requirements Analysis: Methodology and Application in AAL Projects*, submitted to journal of Information and Management, Elsevier.
- [Volere 2008] “Volere Requirements Specification Template. Edition 11 - February 2006”, <http://www.systemsguild.com/GuildSite/Robs/Template.html#anchor799036>, (last accessed 30 Dec 2008).